

BIOHACK NOTES



STRATEGIES FOR ENHANCEMENT IN FOOD PRODUCTION

- BASED ON ACTIVE RECALL AND SPACED REPETITION
- TARGET 360/360 IN NEET BIOLOGY & 100/100 IN BOARDS!



PARTH GOYAL

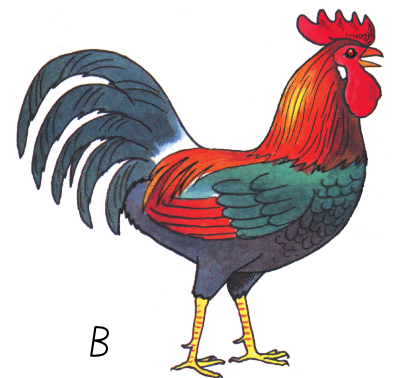




• ANIMAL HUSBANDRY

1. _____ is the agricultural practice of breeding and raising livestock.
2. More than ____ % of the world livestock population is in India and China.
3. But contribution in world farm produce is only ____ %.
4. Poultry animals include - (4)
5. A group of animals related by descent and similar in most characters like general appearance, features, size, configuration, etc., are said to belong to a _____
6. Define inbreeding. (NEET)
7. Inbreeding increases homozygosity/heterozygosity. (NEET)
8. Inbreeding exposes harmful recessive genes that are eliminated by selection. T/F (NEET)
9. Continuous inbreeding decrease _____ and _____, this phenomenon is called _____
10. How to resolve inbreeding depression ? (NEET)
11. Types of outbreeding are - (3)
12. What is out-crossing ?
13. Best breeding method for animals that are below average in productivity in milk production, growth rate in beef cattle, etc is -
14. _____ allows the desirable qualities of two different breeds to be combined.
15. Breed developed in punjab by cross-breeding is - (NEET)
16. Hisardale is a breed of cows. T/F
17. Hisardale was developed by crossing _____ and _____
18. In interspecific hybridisation, male and female animals of two different unrelated species are mated. T/F
19. Mule is formed by crossing male _____ and female _____
20. Controlled breeding experiments are carried out using artificial insemination. T/F
21. The semen is transported in a warm container. T/F
22. MOET full form - (NEET)
23. In MOET, cow is administered with hormone with LH/FSH like activity.
24. This hormone cause -
25. Due to this, instead of one egg per cycle, ____-____ eggs are produced.
26. Artificial insemination is necessary for MOET to be successful. T/F
27. The fertilised eggs at ____-____ celled stages are recovered surgically/non-surgically and transferred to _____
28. High quality meat has high/less lipid.

DigaQ. 1



29. MOET is not used for rabbits. T/F

30. Bee-keeping is also called -

31. Apiculture is a cottage industry. T/F

32. Beeswax is used in - (2)

33. The most commonly reared bee species is -

34. Bee keeping is labour-intensive. T/F

35. Bees are pollinators of - (4)

36. Some common fresh water fishes - (3)

37. Some common marine fish - (4)

38. On the similar lines of green revolution, fisheries have undergone _____ revolution.

DigaQ. 2



• PLANT BREEDING

39. Recorded evidence of plant breeding dates back to _____-_____ years ago.

40. The entire collection (of plants/seeds) having all the diverse alleles for all genes in a given crop is called _____ (NEET)

41. _____ is the root of any breeding program.

42. _____ is crucial for success of the breeding objective.

43. _____ is a very time consuming and tedious process.

44. Usually only one in few hundred to a thousand crosses shows the desirable combination. T/F

45. Tell the 5 steps for breeding a new genetic variety of crop -

46. Agriculture accounts for approximately _____ % of India's GDP and employs _____ % of population.

47. When did Green Revolution came into picture ? (NEET)

48. During the period 1960 to 2000, wheat production increased from _____ million tonnes to _____ million tonnes while rice production went up from _____ million tonnes to _____ million tonnes.

49. _____ developed semi-dwarf wheat, at International Centre for Wheat and Maize Improvement in country _____.

50. 2 high yielding and disease resistant wheat varieties introduced in 1963 were - (2)

51. IR-8 was developed at -

52. Variety developed at Taiwan was -

53. Later better-yielding semi-dwarf varieties _____ and _____ were developed in India. (NEET)

54. IRRI is situated in country -

55. _____ sugarcane was originally grown in north India.

56. _____ had thicker stems and higher sugar content.

57. Hybrid breded millets are resistant to _____ stress.

58. Brown rust occur in -



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DigaQ. 3

A



B



C



59. Fungi cause _____ disease of sugarcane.
60. Late blight of crucifers is caused by fungi. T/F
61. Ex. of Bacterial disease in plant - (1)
62. Ex. of viral disease in plant - (2)
63. In mung beans, resistance of which disease is induced by mutation ? (2)
64. Bhindi scientific name is -
65. Resistance to yellow mosaic virus in bhindi formed a new variety called _____
66. Resistance to _____ in cotton and _____ in wheat is an example of resistance by hairy leaves.
67. In wheat, solid stems lead to non-preference by the stem borers. T/F
68. _____ and _____ cotton varieties do not attract bollworms. T/F
69. High/low aspartate, high/low nitrogen and sugar content in maize leads to resistance to _____
70. Diets lacking in _____, _____, _____, _____ - increase the risk for disease, reduce lifespan and reduce mental abilities.
71. Breeding crops with higher levels of vitamins and minerals, or higher protein and healthier fats is called
72. In 2000, maize with twice the amount of _____ and _____ were developed.
73. _____ wheat variety had high protein content.
74. Iron fortified wheat/rice are developed.
75. Vitamin A enriched vegetables - (3)
76. Vitamin C enriched vegetables - (4)
77. Spinach and bathua were _____ and _____ enriched.
78. Protein enriched - (4)
79. Bathua scientific name is -



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Table 1

Tell the missing words in the tables -

Crop	Variety	Resistance to diseases
Wheat		
	Pusa swarnim (Karan rai)	
		Black rot and Curl blight black rot
Cowpea		
Chilli		

Table 2

Crop	Variety	Insect Pests
		Aphids
Flat bean		
	Pusa Sawani Pusa A-4	



• SCP & TISSUE CULTURE

80. ___ kg of grains is needed to produce 1 kg of meat.

81. More than ___ % of human population is suffering from malnutrition.

82. Ex. of SCP - (I) (NEET)

83. Bacteria with high rate of biomass production is - (NEET)

84. Plants which are genetically identical to the original plant from which they were grown are called -

85. Any part of a plant taken out and grown in a test tube is called -

86. This capacity to generate a whole plant from any cell/explant is called _____

87. Method of producing thousands of plants through tissue culture is called _____

88. _____ part of plant is free is always free of virus. (NEET)

89. Cell without cell wall is called - (NEET)

90. What is pomato ?

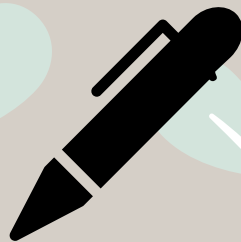


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STRATEGIES FOR ENHANCEMENT IN FOOD PRODUCTION



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ANSWERS

• ANIMAL HUSBANDRY

1. Animal husbandry
2. 70
3. 25
4. chicken, ducks, turkey and geese
5. Breed
6. mating of more closely related individuals within the same breed for 4- 6 generations
7. Homozygosity
8. T
9. Fertility and yield, inbreeding depression
10. Outcrossing
11. Out crossing, cross breeding, interspecific hybridisation
12. breeding of the unrelated animals, which may be between individuals of the same breed but having no common ancestors for 4-6 generations
13. Out-crossing
14. Cross-breeding
15. Hisardale
16. F, sheep
17. Bikaneri ewes and Marino rams
18. F, related should be unreplaced by related
19. Donkey, horse
20. T
21. F, it is transported in frozen form
22. Multiple Ovulation Embryo Transfer
23. FSH
24. Super ovulation
25. 6-8
26. F
27. 8-32, non-surgically, surrogate mothers
28. Less lipid
29. F
30. Apiculture
31. T

32. Preparation of cosmetics and polishes

33. *Apis indica*

34. F

35. Sunflower, brassica, apple, pear

36. Catla, Rohu, Common Carp

37. Hilsa, Sardines, Mackerel and Pomfrets

38. Blue

• PLANT BREEDING

39. 9,000-11,000

40. Germplasm collection

41. Genetic variability

42. Selection process

43. Cross hybridisation among the selected parents

44. T

45. Steps for breeding a new genetic variety of crop

I. Collection of variability

II. Evaluation and selection of parents

III. Cross hybridisation among the selected parents

IV. Selection and testing of superior recombinants

V. Testing, release and commercialisation of new cultivars

46. 33, 62

47. Mid-1960s

48. 11 to 75, 35 to 89.5

49. Norman E. Borlaug, Mexico

50. Sonalika and Kalyan Sona

51. IRRI (International rice research institute)

52. Taichung Native - I

53. Jaya, Ratna

54. Philippines

55. *Saccharum barberi*

56. *Saccharum officinarum*



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57. Water
 58. Wheat
 59. Red rot
 60. F, late blight of potato, not crucifer
 61. Black rot of crucifers
 62. Tobacco mosaic and turnip mosaic
 63. Yellow mosaic virus and powdery mildew
 64. *Abelmoschus esculentus*
 65. Parbhani kranti
 66. Jassids, cereal leaf beetle
 67. F, stem sawfly instead of borers
 68. Smooth leaved and nectar-less
 69. High, low, maize stem borers
 70. Iron, Vitamin A, iodine and zinc
 71. Biofortification
 72. Lysine and tryptophan
 73. Atlas 66
 74. Rice
 75. Carrot, spinach, pumpkin
 76. Bitter gourd, bathua, mustard, tomato
 77. Iron and calcium
 78. Broad, lablab, french beans and garden peas

79. *Chenopodium*

• SCP & TISSUE CULTURE

80. 3-10
 81. 25
 82. *Spirulina*
 83. *Methylophilus methylotrophus*
 84. Somaclones
 85. Explant
 86. Totipotency
 87. Micropropagation
 88. meristem (apical and axillary)
 89. Protoplast
 90. Somatic hybrid of tomato and potato

• DigaQs

DigaQ. 1 - Improved breed of cattle and chickens

A - Jersey

B - Leghorn

DigaQ. 2 - Mule

DigaQ. 3 - Indian hybrid crops

A - Maize

B - Wheat

C - Garden peas

Table I

Crop	Variety	Resistance to diseases
Wheat	Himgiri	Leaf and stripe rust, hill bunt
Brassica	Pusa swarnim (Karan rai)	White rust
Cauliflower	Pusa Shubhra, Pusa Snowball K-1	Black rot and Curl blight black rot
Cowpea	Pusa Komal	Bacterial blight
Chilli	Pusa Sadabahar	Chilly mosaic virus, Tobacco mosaic virus and Leaf curl

Table 2

Crop	Variety	Insect Pests
Brassica (rapeseed mustard)	Pusa Gaurav	Aphids
Flat bean	Pusa Sem 2, Pusa Sem 3	Jassids, aphids and fruit borer
Okra (Bhindi)	Pusa Sawani Pusa A-4	Shoot and Fruit borer



SCAN AND DONATE US SO THAT WE
CAN CREATE MORE SUCH QUALITY
CONTENT FOR YOU!

JUST ₹10-20 WILL BE APPRECIABLE! :)

Milk, so natural it begins with



artificial insemination



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